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James R. Templeton receives National Science Foundation grant

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FOR SUNDAY RELEASE

After its night on stage and screen, the iguana is having its day at Montana State University, where its rather unorthodox method of secreting salts is under study.

The three-year research project, titled "The roles of the nasal salt gland and kidney in electrolyte and water balance in the lizard," is supported by a National Science Foundation grant of $25,900 to Dr. James R. Templeton of the zoology faculty.

Unlike mammals, which secrete salt through the kidney into the urine, some iguanas and some birds can secrete salt through their nostrils from unique glands situated near each nasal passage. Dr. Templeton has found the fluid from these bilateral glands to be extremely rich in the salts of potassium and sodium. In fact, he reports, this fluid contains more potassium than any body fluid of any other animal so far measured.

Dr. Templeton says that usually by the time the fluid has reached the nostrils of the lizard, it has evaporated, leaving the dried salt to encrust around the nostrils and to flake off eventually. This ability to remove salt in such a concentrated fluid is invaluable to a desert dweller like a lizard that must conserve precious water but still must secrete salts, he explained.

Other lizards do not have a functional nasal salt gland and must excrete salts by way of the urine, the zoologist said. He is making a comparative study of the roles that this gland and the kidney play in salt and water excretion in the large black iguana of Mexico, which possesses the gland, and in the equally large South American tegu lizard, which does not have the gland.

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